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® Date of deferred publication of the search report: 14.04.93 Bulletin 93/15 7) Applicant: SMITH INTERNATIONAL, INC. 16740 Hardy Street Houston, Texas 77206(US)

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Rock bit.

(97) A rock bit is disclosed having a plurality of rolling cone cutters each having a gage row of inserts oriented to face the borehole bottom for crushing the same, and a second row of heel gage inserts which are oriented to face the borehole sidewall for scraping the same. The heel row inserts are interleaved between the gage row inserts and the cutting surface profile of the heel row inserts overlaps the cutting surface profile of the gage inserts in order to alleviate most of the scraping action normally encountered by gage inserts. The crowns of the heel row inserts are within four millimeters up hole from the crowns of the gage row inserts. The heel inserts are made of a harder material than the gage row inserts for resisting the scraping action against the sidewall of the borehole.

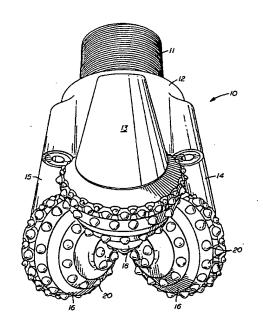


FIG. 1



EUROPEAN SEARCH REPORT

Application Number

EP 92 10 6450

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Category	Citation of document with in of relevant pas		Relevant to claim	APPLICATION (Int. Cl.5)
A	US-A-2 990 025 (TALI * column 1, line 9 * column 2, line 55 figures *	BERT) - line 12 * - column 3, line 13;	1-3,9	E21B10/16 E21B10/52
A	FR-A-2 029 550 (DRE * page 2, line 5 - * page 4, line 36 - figures *	SSER INDUSTRIES INC.) line 19 * page 5, line 5;	1-3,9	
A,D	US-A-3 727 705 (NEW) * column 1, line 57 figure 2 *	MAN) - column 2, line 8;	1,3,7	
				TECHNICAL FIELDS SEARCHED (Int. Cl.5)
				E21B
	The present search report has b	een drawn up for all claims		
	Place of search THE HAGUE	Date of completion of the search 17 FEBRUARY 1993		Exemple: LINGUA D.G.
X : particularly relevant if taken alone Y : particularly relevant if combined with another		E : earlier palen after the filin other D : document ci	T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons	
A:tex O:no	cument of the same category hnological background n-written disclosure ermediate document	\$41.141.111.11W * 144.000000		